

**Next Meeting**

Annual Fall Auction  
Friday November 7th, 1986  
Granger School  
Center of Feeding Hills  
Routes 57 and 187  
Doors open at 6:30 PM  
Auction starts promptly  
at 7:00 PM

**Dues**

HCRA dues are due by November 1st! Applications were mailed with September **ZERO BEAT**, or can be obtained at any HCRA meeting. Your continued support is appreciated. Don't delay; do it today! Thank you!

**FOR SALE**

FOR SALE or ???... Colins crystal pak... Drake TR-4 transceiver with AC power supply... Hallicrafters HT-37 transmitter... Heath HW-12A transceiver with AC power supply... National HRO-5 receiver with coils and power supply... Heath HO-10 monitor scope... Drake TVI filter... HP audio oscillator... Navy LM-15 frequency meter... Old tube testers... For all these items please call Mike W1DGJ at (413) 583-6678

FOR SALE: Portable Gas Engine Generator. 2500 Watts, 115/230 VAC single phase 3 wire. Briggs & Stratton 9 HP engine. Weight 175 pounds. Excellent Condition. Used only on a few Field Days. \$250.00. Phone 413-532-6020 evenings. Robert Stephens, W1MM  
20 Lindor Heights, Holyoke, MA 01040

ESTATE SALE: From the estate of W1GOX: HT-32 and SX-101, plus many other items. Please call Ed Archambault at 413-782-6594

AVAILABLE: Rohn self supporting foldover tower, on ground with rotor, W2AU 10/15/20 meter antenna, and 6/10/15/20 meter mini-quad with new capacitor installed. Please call Jean Morrison, XYL of AB1R, at 203-745-4711 or 16 Poplar Street, Enfield, CT 06082

If you have items for sale please send them to the Hampden County Radio Association, P O Box 482, West Springfield, MA 01090

**HCRA now offers ARRL WAS & VUCC Awards!**

As part of the ARRL's Special Service Club program, the HCRA is now handling a number of ARRL awards. Doc Webb, W1HOD, is our ARRL awards coordinator, and will be glad to work directly with you. If you are interested in either the ARRL Worked All States or VHF UHF Century Club awards please contact him directly. His mailing address is: W1HOD, Doc Webb, 4 Bullard Ave, Holyoke, MA 01040.

**Callbooks**

The HCRA is again offering Radio Amateur Callbooks. As you may have noticed on the 1986-1987 membership application, either edition is available for only \$17.00 with your dues payment. We will offer callbooks to anyone on an as available basis at \$18.00 each. Please note that shipping is *NOT* included! We expect receipt of the callbooks on or about the first of December. You will not find a lower price anywhere! Please contact Ron, WB1ETS, at (413) 739-5228 for more information, or to place an order.

**Events**

The following is a list of events of interest to area hams. We'd like to include more; please send them to the club address and we'll try to keep them up to date!

- 26-Oct-86 ARRL/VEC exam sponsored by NOBARC at the Berkshire Community College in Great Barrington, MA. Walk-ins arrive by 1:30 PM, exams start promptly at 2:00 PM. Contact WB1AUW or KA1KPH for info.
- 26-Oct-86 NoBARC club auction at 7:00 PM at the Polish Community Club in Pittsfield. More info on K1FFK 146.91.

*Please support the  
Hampden County Radio Association*

• 01-Nov-86 ARRL/VEC exam sponsored by the HCRA in Wilbraham, MA. See elsewhere in this issue.

• 07-Nov-86 Next HCRA meeting is the Annual Auction at the Granger School in Feeding Hills center. The doors open at 6:30 PM and the auction starts promptly at 7:00 PM.

• 13-Dec-86 ARRL/VEC exam sponsored by HCRA in Wilbraham, MA.

• HCRA classes for all license classes, Novice through Amateur Extra, continue every Wednesday night, 7:00 PM through 9:30 PM, at the Agawam High School. Please feel free to stop by at any evening to work on your license upgrade!

• FCC expected to rule on the Novice proposal SOON! Listen to W1AW for info.

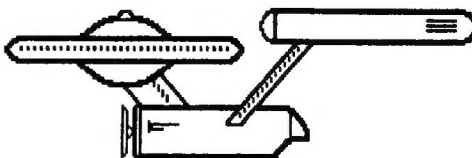
**ARRL Books**

Many of you may have noticed that the League has recently started to charge a \$2.50 (\$3.50 for UPS) shipping and handling fee for ARRL Book orders. The HCRA has the perfect answer!

The HCRA still has a large supply of license class materials. This includes TUNE IN THE WORLD (no tape), TECH/GEN, ADVANCE, and AMATEUR EXTRA class license manuals and the FCC RULE BOOK. These books are available for purchase at any Wednesday class and all club meetings.

The HCRA will also be glad to ship any of these books directly to you via UPS at NO additional cost. Please call Bob KA1KPH at 413-786-7966 to place your order.

A limited supply of the new ARRL Handbooks will also be available on a first come first serve basis. Call for more info!



NCC1701

## New FCC Exam Credit

Beginning on December 1st, the Commission will allow re-examination credit for written elements passed during an otherwise unsuccessful amateur examination, according to an FCC news release. Currently the FCC only allows credit for code examination elements. The FCC also clarified that examiners who administer a Novice examination are not required to issue a Certificate of Successful Completion of Examination. Instead, applicants may produce a photocopy of a pending application which indicates the applicant has qualified for a Novice license. These rule changes are contingent upon Office of Management and Budget approval of revisions to the FCC Form 610.

## NEDXCC Banquet

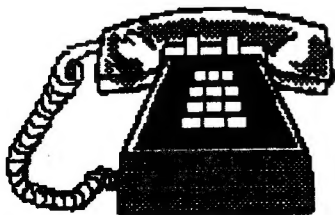
The New England DXCC Annual Banquet will be held November 8, 1986 at the Masonic Lodge, Concord Center (opposite Colonial Inn), in Concord, MA. The afternoon session starts at 2:00 PM (\$3.00 charge) with the following program:

- Dick Eastman, K1OJH: Living in China
- Don Search, W3AZD: DXCC Desk
- NCDXF: 5X5 Uganda
- Earthwatch: Deductable DXpeditions?
- Bill Poellnitz, K1MM: DXAC
- Refreshments

The evening session starts at 6:30 PM and is \$16.95 per person. Dinner will be served followed by:

- Bill Poellnitz, K1MM: The DX Quiz
- Tom Frenaye, K1KI: ARRL Director
- Bob Wallace, W1HH: DXCC Countdown
- The dinner speaker will be Bob Locher, W9KNI, who is number one on the CW-DXCC Honor Roll, and author of the Complete DX'er and numerous articles on DXing in Ham Radio Magazine and CQ Magazine.

For more information contact Bob McCormick, KA1KPH or Charles Lukas, W1DOH, RFD #1 - 24 Durkee Road, Acton, MA 01720.



HCRA Phone numbers on back page  
HCRA *ZERO BEAT* November 1986

## Proposed Novice Frequencies

The ARRL Letter reports that the Commission has proposed authorizing additional frequencies between 7050-7075 KHz for Novice and Technician operators in Alaska, Hawaii, Region II Pacific Insular Areas, and the Caribbean Insular Areas. Stay tuned!

## Yankee Clipper Contest Club

While at the New England ARRL convention and Flea Market in Boxboro, Mass, your *ZERO BEAT* editor had the occasion to stop in at the 1 O'Clock Yankee Clipper Contest Club meeting. A recent invite by Tom Frenaye, K1KI, and a copy of their September 1986 newsletter *SCUTTLEBUTT* sparked my interest, and the meeting was more than I expected. The YCCC coverage area is a 175 mile circle with the center somewhere around Sturbridge, MA. Their primary purpose is for participation in contests - you may have seen that they often rank in first or second place in the unlimited category for club scores. Their dues are \$10.00 per year, and you must attend one of their bi-monthly (every other month) meetings in Sturbridge to join. Their newsletter, along with the various other materials they have available for membership, is well worth it. For more information please write the YCCC, 11 Michigan Drive, Hudson, MA 01749, or call Dave Robbins, KY1H, who is the Western Mass area YCCC manager. His numbers are at home: 413-655-2714 or at work: 413-494-5618

## Packet Radio News

The FCC has acted in PR Docket 85-105 to make permanent the provisions of the temporary waiver issued earlier in the year permitting network amateur stations, transmitting digital communications on VHF and above, using the AX.25 packet protocol, to be operated under automatic control while retransmitting third-party traffic.

Although the FCC acknowledged assurances of safeguards by the ARRL for the AX.25 packet protocol, the FCC noted that control operators capable of monitoring such transmissions must alert the control operator of any intermediate retransmitting station, under automatic

control, of any station misuse so that corrective action can be taken.

The Commission deferred action on requests for automatic control for digital communications on HF until its feasibility can be determined. ARRL HQ has received only the press release, not the actual rulemaking, so no further details are available. More details to follow in *QST* and on W1AW.

## Contest Schedule

Tnx to Billy Lunt, KR1R, YCCC *SCUTTLEBUT* and Frank Anzalone, W1WY, CQ for the following dates:

### 1986

Oct	25-26	CQ WW DX Phone
Nov	1-3	Sweepstakes CW
	8-9	OK DX
	15-17	Sweepstakes SSB
	29-30	CQ WW DX CW
Dec	5-7	160m contest
	13-14	10m contest

### 1987

Jan	1	Straight Key Night
	10-12	January VHF SS
	23-25	CQ WW 160m CW
	24-1	Novice Roundup
Feb	20-22	CQ WW 160m SSB
	21-22	DX Test CW
Mar	7-8	DX Test SSB
	28-29	CQ WW WPS SSB
Apr	13	144 MHz sprint
	21	220 MHz sprint
	29	432 MHz sprint
May	8	902 MHz sprint
	14	1296 MHz sprint
	23-24	50 MHz sprint
Jun	13-15	June VHF contest
	27-28	Field Day
Jul	11-12	IARU HF contest
Aug	1-2	UHF contest
Sep	12-14	September VHF contest
Nov	7-9	Sweepstakes CW
	21-23	Sweepstakes SSB
Dec	4-6	160m contest
	12-13	10m contest

Please consult *CQ* or *QST* for more information on the above listed events.

**HCRA Packet Digipeater**  
**W1NY-1**  
**145.010 mhz**  
**KD9MU trustee**

## The Perfect Antenna Part II

by Fred Stefanik N1DPM

After having such good luck with the 2 meter antenna modification described last month I thought I would try another. The next band to consider was 70cm or 432 mhz. There were a couple of possibilities to be researched, modifying an existing design, i.e. a Cushcraft 424B, Tamma SST19, K2RIW-19, KLM 432-30LBX, or just build from scratch. So far I've completed a mod for the Cushcraft, Tamma, and RIW. I'm working on the KLM/LBX and also some scratch NBS/N1DPM yagis. The mod in this article pertains to the Cushcraft 424B. Some general complaints about this antenna were the high first sidelobes, trigonal reflector (the gimmick), and the wet VSWR performance.

The first thing that I looked at was the general element length. The antenna seems to have a constant taper as shown in Figure 1, except that the reflector is hardly long enough, and D4 seems to be the only director that doesn't follow the taper. First to correct the reflector, I looked at other 432 mhz yagi designs and found that they all have reflectors between 13.75 and 14 inches in length. I replaced the main reflector with a 14 inch piece of 3/16 aluminum rod cut from an old 2 meter tri-reflector element. The extra retainer cups you will need can be salvaged from the 2 useless tri-reflectors on this yagi, which should be removed along with their support arms.

Looking at the element lengths in Figure 1 I then decided that D4 should be made the same length as D3 and D5, making them closer to correct than supplied. Next I set up the antenna on a tripod and mast about six feet above the ground and connected a Bird Thru-line model 43 wattmeter directly to the type N antenna connector with a double male adapter. Not knowing what type of plastic the black insulator blocks on the driven elements were made of, I removed them and didn't feel that any mechanical strength was lost. I then adjusted my exciter for 5 watts of power at the antenna, reversed the wattmeter slug, and checked the VSWR. It was about 1.6:1 or 1.7:1, not very good. After manipulating the match, I found that the best I could get was about a 1.5:1.

Something else was effecting the driven element. I tried removing the reflector, which resulted in no change. I replaced the reflector, and tried removing D1. Drastic change!

I then proceeded to apply RF to the antenna. While monitoring the reflected power I held D1 in the center (the RF cold spot) and moved it along the boom between the driven element and D2. Low and behold, there was a very large dip in reflected power when D1 is moved forward a little bit from its stock position. I then drilled the boom and relocated D1 13 3/4 inches from the rear of the boom, as indicated in Figure 2.

You can drill this one hole pretty accurately by placing a straight edge along the other elements as a guide. Mark and drill both sides individually for best accuracy. I suggest not drilling straight thru the boom as severe element misalignment could occur quite easily. Again, the extra retainer clip needed can be salvaged from the old tri-reflector. With this modification complete, set the T match up as shown in Figure 3. Be sure to keep this balanced and also to maintain the 1 inch inside dimension on the T arms. Set up this way, the match is approx. 1.15:1 at 432.100 mhz.

On the air tests seem to show that the gain is virtually unchanged, front to back is approx. 15 dB. Using a pair of these antennas stacked 5 feet apart, the dry VSWR is 1.16:1 and climbs to 1.3:1 or so when wet, still certainly acceptable. Remember, this mod is not computer generated. It is trial and error, or, success generated. As I mentioned in the last article, there is no such thing as the perfect antenna, so use what works best for you!

## Ham Tales

Lenore Jensen, W6NAZ, is still looking for tales about ham radio. She is compiling a book HAM TALES which is a collection of experiences in Amateur Radio, of interest to a general reader. Your experiences with rescues, coincidences and amusing experiences with or because of ham radio would be greatly appreciated. She also notes that the proceeds from this book will go to the ARRL Foundation.

Please write her directly. Lenore Jensen W6NAZ, 14867 Round Valley Drive, Sherman Oaks, CA 91403

## USSR Tidbits

Tom Frenaye, K1KI, publishes a newsletter about the Soviet Union six times a year. It is intended to serve as a way for people interested in Amateur Radio in the USSR to share information about awards, contests, language and general information. Tom only asks that you send SASE's for receipt of issues, although donations to help cover the costs of printing are welcome. Tom also has a number of "operating aids" for USSR work, including Oblast listings, awards rules, etc. Write to Tom at P O Box 62, Unionville, CT 06085.

DXCC applications from the USSR are scarce because of a rule the Central Radio Club has been following for several years. A new application for DXCC requires a minimum of 300 countries, an application for 5BDXCC requires at least 300 on one band. Talk about tough rules! It sure cuts down on the postage costs (western currency is needed). It also means that Russian amateurs can not buy a 5BDXCC or Honor Roll plaque without help from friends overseas.

Changes in the Soviet licensing structure are being put into place. There is no more differentiation between HF and VHF stations. Class IV (beginners) requires no knowledge of CW, but presumably some written or oral exam, and allows 160m only. Class III requires CW and the previous 40m segment is taken away, while 21.100 through 21.150 CW is added. Class II licensees have their power limit raised from 40 to 50 watts, full 15 meter privileges CW and SSB, and full 40 meter access. Class I licensees have the 10.110 thru 10.150 segment added (CW only), but didn't get the rumored increase in power limit.

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## Thanks

This issue of ZERO BEAT was brought to you by: The ARRL Letter, K1BXE, KA1KPH, N1DPM, W6NAZ, YCCC SCUTTLEBUT, CQ, NEDXCC, K1KI's USSR TIDBITS.

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EME  
Moonbounce

## N1DPM 22 element 70cm Yagi

<u>Element</u>	<u>Stock Length</u>	<u>Exposed Length</u>	<u>Corrected Length</u>	<u>Corrected Exposed Length</u>
Reflector	13 5/16	6 3/32	14	6 7/16
Driven	13 1/4	6 1/16	13 1/4	6 1/16
D1	12 3/16	5 17/32	12 3/16	5 17/32
D2	11 3/4	5 5/16	11 3/4	5 5/16
D3	11 11/16	5 9/32	11 11/16	5 9/32
D4	11 13/16	5 11/32	11 11/16	5 9/32
D5	11 11/16	5 9/32	11 11/16	5 9/32
D6	11 1/2	5 3/16	11 1/2	5 3/16
D7,8,9	11 3/8	5 1/16	11 3/8	5 1/16
D10	11 1/4	5	11 1/4	5
D11,12,13	11 3/16	4 31/32	11 3/16	4 31/32
D14,15,16	11 3/16	5 1/32	11 3/16	5 1/32
D17,18,19	11 3/16	5 1/32	11 3/16	5 1/32
D20	11 3/16	5 1/32	11 3/16	5 1/32

Figure 1

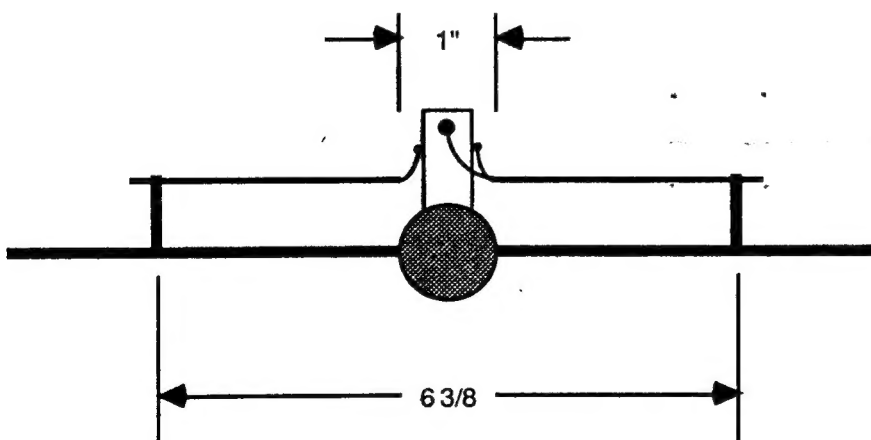


Figure 3  
Driven Element Detail

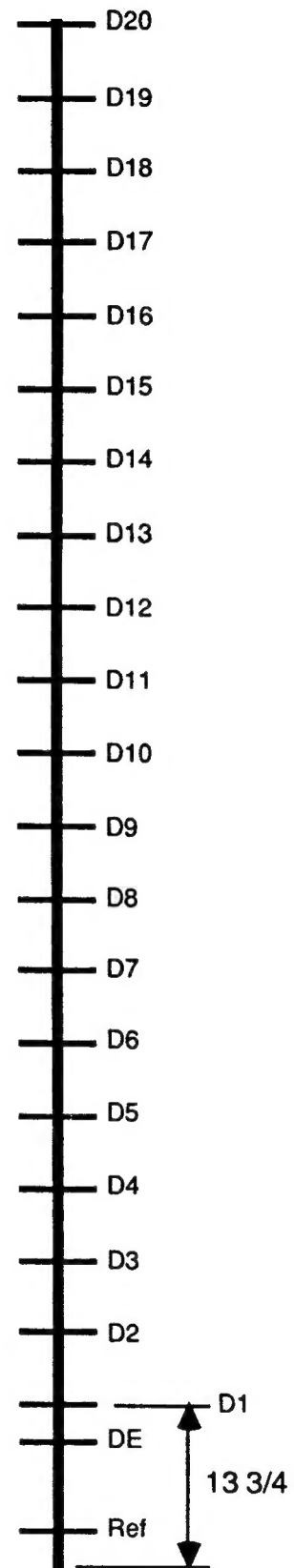


Figure 2



## Calling All Young Artists

If you're an artist between the ages of 8 and 18, or you know someone who is, here's an opportunity you won't want to miss. We'd like you to showcase your talent and originality in our national art contest. And, if your entry is one of the winners, your artwork will be forwarded to a worldwide contest for judging. Our contest features awards along with the possibility of national and international recognition for you.

The ARRL is sponsoring a national art contest with the theme "Youth in Amateur Radio." It is a wide-open theme, which allows you to use your imagination in the following mediums: photographs, drawings, paintings and other illustrations (excluding written text). You choose the medium; all we ask is that no artwork be larger than 11 by 14 inches.

There are three age categories, and a first, second, and third prize will be awarded for each one. They are: Group 1 — ages 8-12, Group 2 — ages 13-15, Group 3 — ages 16-18. Forthcoming issues of *QST* will announce winning entries and awards. Winning entries and other entries deemed appropriate will be forwarded to the "Youth in Electronics" contest being sponsored by the International Telecommunication Union (station 4U1ITU) in Geneva, Switzerland.

Every contest needs some rules, so here they are:

- All entries must be received at League headquarters in Newington, CT no later than February 1, 1987.
- Entrants must be League members or be sponsored by a League member. (If you don't know any members, please write the Hampden County Radio Association, Inc., P O Box 482, West Springfield, MA 01090).
- Each entry must be accompanied by a completed application form (available from the HCRA).
- Each entry must be the original creation of the entrant.
- Entries become the property of ARRL, and cannot be returned.
- Artwork must be no larger than 11 by 14 inches.

Good Luck in the contest!

## 6m and Up

ACTIVITY from NCII 70 cm EME:

	Date	Time	Call	Sent	Recv
	21-Sep	0315	K1FO	539	539
		0350	W8IDU	449	449
#143		0450	KB3QM	0	0
		0520	KD6R	569	559
		0538	KA0Y	569	569
		0556	DF3RU	449	559
		0612	KL7WE	0	0
		0625	KD9GT	559	559
27-Sep		0520	SM0PYP	0	449
		0530	OK1KIR	339	449
		0553	G3LTF	339	549
		0745	W7GBI	459	549
		0812	N4GJV	559	579
		0822	W8IDU	559	559
		0848	K5JL	569	569
		0922	WB5AFY	449	539
		1026	I5MSH	3-way	
			K2UYH	SSB	
			W7GBI	rag	chew
		1110	W7JF	0	0
		1120	W1ZX/3	339	449
		1140	DJ8QL	339	449
		1209	OE5EFM	0	559
		1211	DJ2US	449	459
#144		1249	UA3TCF	0	0
		1315	G3SEK	0	439

KB3QM was a DXpedition to Delaware using a 16 foot dish and 600 watts. SM0PYP is a 4 yagi station running 500 watts. UA3TCF was station QSO number 144 for Frank. RST reports are exchanged when conditions are favorable to warrant it. Otherwise the T-M-O system is used, where O indicates the exchange is copyable.

ACTIVITY from N1DPM:

Since installing new 2m, 130cm, and 70cm antennas I've done quite a bit of listening on the bands. On 70cm, K4QIF, Rusty in Suffolk, VA in FM16 was heard four nights in a row. On the 4th night, 26-Sep-86, I returned Rusty's CQ on 70cm at 0120 UTC and had a nice QSO with him on SSB. Rusty is very active on this band. He runs about 500 watts to 4 KLM 30-LBX yagis. With my new 2m H frame I've been having quite good results. On 29-Sep-86 I listened to a QSO between a W2--- in central NJ and KA4UQW in Virginia Beach, VA, hearing KA4UQW quite nicely. I was surprised to find out that KA4UQW was only running 130 watts and a 215WB @ 40 ft! From what I could tell, the band was not enhanced. Talking to Jim, VE3CZM, in Kemptville, Ontario (FN25) on 2 meters caused some surprises when he

found out I was only running 50 watts out. He showed a lot of interest in my antenna system 4 X 12 element NBS/N1DPM yagis. I told Jim that I would mail him a copy of *ZERO BEAT* with the article on the antennas. Maybe if he likes our newsletter we'll have a DX club member!

Hopefully during the winter months I'll be able to do some equipment evaluations, with the club membership support. Wouldn't you like to know what solid state amplifier is the most linear and what to expect from it? I'll need help with this project. Does anyone want their own Mirage, KLM, Tokyo High Power Labs, Microwave Modules, SSB Electronics equipment reviewed? How about your exciter? Let me know!! Drop me a line via the club address. 73 de Fred, N1DPM

## November Volunteer Examination

On November 1, 1986, the Hampden County Radio Association will sponsor a volunteer examination which will be held at the Hampden Wilbraham Regional High School (Minnechaug). Walk-ins are welcome.

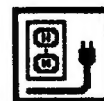
All grades of license examinations will be offered, from Novice to Extra. The session starts promptly at 9:00 AM, but it is suggested that you arrive at least a half hour early to check in, and have your forms validated.

Bring a completed FCC form 610, a check for \$4.25 made out to the ARRL-VEC, a photocopy of your amateur license, and one additional form of identification.

FCC 610 forms can be obtained from the ARRL, the FCC, or at the Hampden County meetings. They will also be available at the exam session, but come early so that you can fill out the form before the session starts.

The next Hampden County sponsored exam session will be held on December 13, 1986 at Minnechaug, to coincide with the completion of the amateur radio classes held in Agawam.

**BE SAFE!**  
Turn it off before  
you work on it!



### ***Need more information?***

The following hams are ready  
to answer your questions on:

- HCRA & ARRL membership
- Upcoming HCRA meetings
- HCRA license classes
- ARRL/VEC exams

### ***Please call...***

Yorke Phillips K1BXE 566-3010  
Steve Nelson WA1EYF 596-8216  
Ray Burk WB1GLX 730-2774 days  
Ray Burk WB1GLX 596-6403 eves  
Bob McCormick KA1KPH 786-9958  
Ned Carpenter NB1R 596-4625

Or write directly to the club!

## **ARRL/VEC Sessions**

November 1<sup>st</sup>

December 13<sup>th</sup>

Minnechaug Regional High School  
Main Street, Wilbraham MA  
Walkins Always Welcome!

We also handle one-on-one exams for those  
who have special needs or are unable to  
attend a scheduled session.

Please contact Yorke Phillips,  
K1BXE, for more information on  
the ARRL/VEC program.

**Next Meeting**  
**November 7, 1986**

## ***FALL LICENSE CLASSES***

FCC license classes continue every  
Wednesday through December 10<sup>th</sup>.  
There will be no class on November  
26<sup>th</sup>. Classes are at the Agawam  
High School, Route 57, Agawam  
MA. Classes start promptly at 7:00  
PM and run no later than 9:30 PM.  
ARRL license manuals will be on  
sale at the classes: Novice \$7.00, all  
others \$5.00, FCC manual \$4.00.  
There is *NO* charge for the classes.  
Although classes have already  
started please feel free to stop any  
time! We'd be glad to help you  
upgrade. See related info inside on  
our special ARRL book offer!

## **HCRA Meetings**

First Friday of each month at  
Feeding Hills Congregational Church  
Center of Feeding Hills  
Intersection of routes 57 & 187  
Doors open at 7:30 PM  
Meeting starts promptly at 8:00 PM  
*All hams are welcome to attend!*

## **HCRA December Meeting**

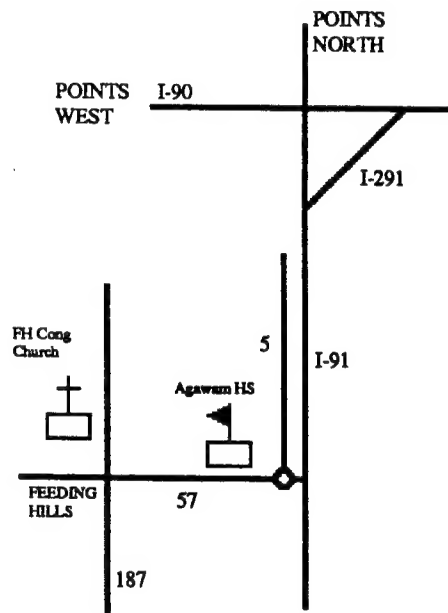
Stop by the December 5<sup>th</sup> meeting  
for the first annual HCRA Gab Fest,  
complete with finger food and show  
and tell. Local hams will display  
what's new (and not so new) in ham  
radio. Check out equipment that  
may be on your XMAS list!

## **Annual HCRA Fall Auction**

Friday November 7<sup>th</sup> at the Granger  
School in Feeding Hills center.  
Doors open at 6:30 PM, auction  
starts at 7:00 PM. Call Ron at 413-  
739-5228 for more information.

## **HCRA Repeaters**

KA1JJM/R	147.105	mhZ
KA1KPH/R	449.175	mhZ
W1NY-1	145.010	pkt
W1HGV/R	426.250	atv



**Hampden County Radio Association, Inc.**

**P O Box 482**

**West Springfield MA 01090-0482**

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**OCT 24 1986**

10/87 AC1T

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